

**App search optimisation plan and implementation.
Case: Primesmith Oy (Javelo)**

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<p>This is a project-based thesis discussing the fundamentals of app search optimisation in modern business. Project plan and implementation were carried out for Javelo, a B2C hand-made jewellery company, within three-month period and thenceforth recommendations were given for future development.</p> <p>This thesis aims to approach new marketing techniques that play important roles in online marketing tactics. The main goal of this study is to accumulate best practices of app search optimisation and develop logical thinking when performing project elements and analysing results. The theoretical framework introduces an overview of facts and the innovative updates in the internet environment. They include factors of online marketing, mobile marketing, app search optimisation, with the merger of search engine optimisation (SEO) and app store optimisation (ASO) being considered as an immediate action for digital marketers nowadays. The project of app search optimisation in chapter 4 reflects the accomplished activities of the SEO implementation from scratch and a piece of ASO analysis was conducted and suggestions for Javelo. Other marketing methods like search engine marketing, affiliate marketing, content marketing, together with the customer analysis are briefly described to support of theoretical aspects.</p> <p>The discussion section visualises the entire thesis process by summing up theoretical knowledge, providing project evaluation as well as a reflection of self-learning. This thesis topic is of current importance and uses credible sources to summarise the best values of app search optimisation and its sub-tools for actual utilisation in practice.</p>	
Keywords App Search Optimisation, Apple Store Optimisation, Search Engine Optimisation, Online Marketing, Mobile Marketing	

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1 Introduction

Business situation has never been as tough as it is nowadays. High competition and innovation are evolved dramatically in the global market. This generates obstacles for organisations to create marketing strategies that is able to compete with others and to approach potential customers in the friendly way without bury them in tons of ads. Such perception puts marketers under pressure. Solution for this problem is to make use of technical support like search engine optimisation (SEO) to get the products or services organically findable on the search engines. SEO has been applied by various-scaled companies that has been making huge success to them.

SEO is a powerful means that enables marketers to manage web pages, drive traffic that are potentially leads, and convert them into sales at final stage. In contrast, companies using mobile platform for their products or services like games, photo editors, language tutorials handle SEO as a third party to lead people to the app stores and get them download the apps. However, it has become complex and time-consuming with many steps as people browse on the search engines, facing thousands of choices, being forwarded to the application stores, downloading an app, and registering before being able to really use the app. In the current business competition, keep-it-simple is a top priority. Users need only couple of seconds to decide whether they would buy a product or not, so the less steps users do, the fast decision they make. A research conducted by Forrester (2012, in TechCrunch 2013) showed that the ratio of browsing applications in Apple store accounted for 63 percent and Google Play Store occupied 58 percent out of many other methods like social media, organic search, magazines, televisions and radios, to name a few. The dynamic movement in the app market get marketers to develop app optimisation activities to improve their rankings in the app stores. The optimisation is promising to help businesses maximise the app visibility, which is called app store optimisation (ASO).

Recognise important role of both SEO and ASO as well as their merger in the app-as-a-service companies, this project focuses on studying the new trends, their activities theoretically and testing the new knowledge in practice. This chapter will give the brief introduction about objectives of this thesis, case company, project scope and tasks, and key elements to execute the project activities to reach the initial objectives.

1.1 Background

Mobile-based application market has evolved to be dynamic and super competitive. Statista (2016a) showed that there were 100 billion iOS applications downloaded in the peri-

od of 2008-2015. The total amount of available iOS apps reached 1.5 million in June 2015, while Android market accounted for 2 million in February 2016. At the same time, the online survey conducted by Apptentive (2012, in Optimize My Apps 2016), reported that 63% of customers browsing apps for particular services in app stores instead of searching directly app names. Such numerical statistics proves the importance of app search optimisation in mobile operation systems, especially in iOS and Android.

The employment of app search optimisation for Javelo aims to improve app rankings in the app stores by optimising various on-page and off-page factors to make potential customers more straightforward in finding the app when browsing. This helps open broader opportunity for Javelo to improve brand recognition in the app markets as well as developing their business further as a highly potential Finnish start-up that worth investing in. The app search optimisation will be mentioned more deeply in Chapter 2.

The theoretical framework and practical project studied in this thesis are useful resources for grasping key roles of online marketing using SEO and ASO tools in the global market. This study is especially advantageous to mobile-platform-used start-ups and SME's for planning and executing the similar projects enabling them to grow their products in the higher lever by using the powerful online weapons.

1.2 Project Objectives and Tasks

This thesis aims to increase the right website traffic following by generating potential leads for the self-designed jewellery company Javelo. The project is called App Search Optimisation which is the combination of Search Engine Optimisation and App Store Optimisation. Further explanation of the two terms will be given in Chapter 2. Implementation of the project is considered as part of customer service improvement creating the bridge between customer and app service provider with least steps.

Objectives of App Search Optimisation project are to build up technical knowledge dimension of online marketing and learning technical analyses that helps maximise the contents effectiveness. App Search Optimisation topic is an up-to-date theme in the current international business, so the project grants better understandings on the dynamic app markets which marketers might not have been explored adequately. Along with the opportunity for the author to obtaining a new side of marketing, this project helps Javelo to improve its performance, customer experience, as well as set up goals for long-term investment. Project tasks are made as follows:

- PT1. Building up overall knowledge theoretically
- PT2. Proving the importance of app search optimisation
- PT3. Project implementation and recommendation
- PT4. Evaluating results and conclusion.

Table 1 below presents the theoretical framework, project management methods and outcomes for each project task.

Table 1. Overlay matrix

Project Task	Theoretical Framework	Analysing Methods	Outcomes
Building up overall knowledge theoretically	<ul style="list-style-type: none"> - Online marketing - Mobile marketing - App search optimisation 	<ul style="list-style-type: none"> - Reading and analysing academic sources: books, journals, online stats, business blogs, etc. 	Develop fundamental understandings of related marketing techniques.
Proving the importance of app search optimisation	<ul style="list-style-type: none"> - Search engine optimisation - App store optimisation - SEO and ASO merger 	<ul style="list-style-type: none"> - Internet sources - Interview case company Javelo 	Recognise the role of app search optimisation as a trendy topic for modern business.
Project implementation and recommendation	<ul style="list-style-type: none"> - On-site & off-site SEO implementation - On-page and off-page ASO recommendation 	<ul style="list-style-type: none"> - KPI's - Directly work in the project - Analytics tools 	Show what method works better for the Javelo app and provide suggestion for development.
Evaluating results	<ul style="list-style-type: none"> - Project assessment - Theory summary 	<ul style="list-style-type: none"> - Self-evaluation - Meeting with Marketing Director of Javelo 	Achieve new technical knowledge and experience.

1.3 Project Scope and International Aspect

This project kick-started with the Search Engine Optimisation project where all important aspects were implemented to the Javelo Wordpress site. The SEO includes optimising blog posts and pages, conducting keywords planning, adding supportive features, and so

on. After grasping the basics of SEO, work performance is analysed according to real stats. This SEO part is a groundwork to implement the App Store Optimisation (ASO) which is another crucial part to integrating analytical marketing to the whole business operation of Javelo. Short research of customer segmentation will be conducted in order to track the right direction for ASO activities. The ASO activities will be explained throughout this thesis comprising of the optimising on-page and off-page factors in the Apple Store and Google Play Store.

The main market Javelo has been developing is in America. Javelo wants to increase brand awareness in all states and establish an office in the US while Helsinki headquarter will manage the entire business development. The app search optimisation, especially App Store Optimisation part, would be strongly helpful for Javelo to expand further in the US market and other markets during the execution.

1.4 Benefits

The idea of designing meaningful jewellery and store the memorable moments that Javelo offering is appealing. It can be conveyed to diverse audiences and it is promising to grow quickly in the global market. The App Search Optimisation project, thus, is a great treatment enabling Javelo to reach the wide range of customers that is not only limited in small groups of users. The ability to increase sales also provides a solid evidence supporting fundraising process to the venture capitalists and governmental organisations.

This project helps the author to develop critical thinking and build up knowledge on the analytical marketing, stressing in technical development which possibly become the long-term career path. App search optimisation project is both being an illustration for Javelo in the next campaigns based on online techniques and gives advantages for the author to have better career opportunities after studying this trendy topic. During the stage of building up knowledge on app search optimisation project, other related marketing methods are learnt at the same time. This ensures the credibility of this studies, also deepen understandings for the author. Collaboration with Javelo members and the interview with the Marketing Director of Javelo open deeper understandings by sharing and learning.

1.5 Key Concepts

Affiliate marketing: a marketing method where affiliates get paid by driving sales or leads to another business. This results-based commission is beneficial for the company for gaining leads with lowest risks. (Newlands 2011, 181.)

App search optimisation: can be defined as the fully technical optimisation activities that helps businesses using applications for profits increase rankings, downloads, leads, and sales in app stores (Benitez 16 May 2016).

Apple's App Store: or App Store, the online market containing all applications for iOS mobile devices.

Application/ Mobile Application/ App: a kind of software that is produced for using in mobile devices. Apps are stored in the different online markets of different mobile systems like iTunes, Android, Windows, etc. (Salz & Moranz 2013, 14).

ASO: stands for App Store Optimisation. The optimising activities are done in application stores to improve search rankings. ASO is essentially important for businesses operating by mobile apps platform that helps increase the presence in application markets (Kissmetrics Blog 2013.)

Buyer personas: "Semi-fictional representations of your ideal customer based on real data and some select educated speculation about customer demographics, behaviour patterns, motivations, and goals." (HubSpot Academy 2015a).

Inbound link: the navigator links from specific pages of other websites leading visitors to a site. Inbound link is important to gain trust of search engines' bots to improve web rankings. (Search Engine Watch 2016.)

Google Play Store: or Google Play/ Play Store, the online shop containing all applications for Android mobile devices.

GPS: "stands for Global Positioning Satellite. is a radio navigation system that allows land, sea, and airborne users to determine their exact location, velocity, and time 24 hours a day, in all weather conditions, anywhere in the world" (GIS 2016).

Keyword: the word customers intentionally search for products, services, or any thing on the search engines. Planning keywords is one of the most important parts of app search optimisation.

Online marketing: other names by internet marketing, e-marketing, or web marketing. Online marketing uses online networks to advertise products/ services by increasing brand recognition and internet visibility. (Thomas 2011, 04.)

Organic search: the original words used in searching without paying to have the keywords. This is referred as the relevant contents that are appeared naturally in the search engines. (Wedowebcontent 2016.)

PPC: is Pay-Per-Click, also known as cost-per-click. The result-based method where payment is made for each click on an ad which is seen as online advertising marketing. (Search Engine Watch 2016.)

Search engine: a high-tech programme with the collection of keywords serving searching purpose. When people use certain keywords, the program will bring him/her to the sort of documents showing results based on the search. (Wepopedia 2016.)

SEM: the internet activities are made to increase search rankings on the search engines which includes both SEO and paid search advertising. (Search Engine Watch 2016.)

SEO: shorted for search engine optimisation, is set of online techniques that are used to bring the website to top of the search engines when people search by using keywords. SEO involves many technical activities to drive the searchers to a site. (Davis 2006, 02.)

SERPs: stands for Search Engine Result Pages. SERPs is pages that are shown in the search engine listings when people browsing. (WordStream 2016.)

Spiders: are also called by “bots” or “robots” is a computer programme being generated to crawl all over internet sites in order to find the matched information for each search. Listings are created in the SERPs after the spiders have recognised the correspondence. (Blyth 2011, 34.)

1.6 Case Company

Primesmith Oy, other name by Javelo, is a B2C company provided self-designed jewellery services with the slogan “Jewelry You Create”. The original services offered are hand-made necklaces. The necklaces are made using Javelo app by importing customers’ drawings or photos, then they can retouch with extra features offered in-app, and finally

send to payment. Javelo is expanding fast with new offers like bracelets, earrings, and new features. Javelo's business idea uses smartphones and tablets as a platform that requires customers to download Javelo app to custom and order jewellery, Javelo app brings the exciting experience for users by its simple and user-friendly designing approach.

Story of Javelo started by the Master Goldsmith who has offered a means for self-creating jewellery. He realised that customers can capture the precious moments by smartphones and use the pictures to custom the favourite necklaces at their wish. The business has become more and more successful using mobile services. The main office of Javelo is based in Helsinki while the manufacturing place is in the village of Fiskars, Finland. (Javelo, 2016.)

The Javelo's target audiences are people in the US, yet particular customers' profiles are unclearly clarified by Javelo. The studies of customer insights, thus, are conducted in this thesis based on Google Analytics and info given by the Marketing Director of Javelo. Project of app search optimisation was done to serve the goal to expand the business further in all states of America, so app search optimisation activities are done in English as targeting language.

2 Online Marketing versus Mobile Marketing

This chapter presents the two marketing methods which are online marketing and mobile marketing. They are familiar and correlated concepts that hold plenty of in-common elements. The theoretical part in this chapter will provide overviews of online marketing and mobile marketing, and their relations with the app search optimisation.

2.1 Online Marketing

According to Gay, Charles, and Esen (2007, 05), online marketing is activities that are done to build up and maintain relationships with customer on-line. Thomas (2011, 05) also stated the same opinion that highly emphasised the importance of cherishing customer relationship in order to reach business objectives: "Online marketing means many things to many people, but at heart, it is about making, keeping, cultivating, and rekindling relationships".

Thomas (2011, 05-06) claimed five essential characters that needed to be considered thoroughly in internet marketing, which are awareness, communication distribution, connection, service, and sales. Online marketing purpose is to build relationships to achieve brand awareness. The process is done by many methods, one of whom is to develop the communication process by serving, informing, cultivating prospective customers. Good services combined with high-quality products are the hand-in-hand scenario to achieve targeted sales to keep business evolved.

In the late 2015's stats, 67.6 percent of the US population including the regions of North America, South America, Central America, and the Caribbean are online (Internet World Stats 2016). It displays the huge potentials for businesses to be present on internet. Online businesses, nowadays, are not limited in a local industry, trading activities on internet have boomed internationally and marketers have shifted from the traditional advertising to digital marketing by 30 percent in 2015 (60secondmarketer 2015).

Conforming to Thomas (2011, 06), online marketing is about mixing up the activities to foster customer relationships no matter a business has business-to-business or business-to-customer model, yet method of customer service has been likely to turn to people-to-people marketing. The proactive actions of international organisations have made the online market never been more charismatic. It causes challenges in communications, yet long-term rewarding, as long as the online activities are done properly. The interaction with online users enables marketing practitioners to collect, analyse, and target to the right

audience when planning new campaigns and setting the entire marketing strategies. (Gurău 2008, 169-184.)

Online marketing is a set of wired activities like web building, content marketing, search engine optimisation, online PR, search engine marketing, affiliate marketing, video marketing, and many more as in figure 1 (Newlands 2011, 04-06).



Figure 1. Online Marketing tactics (Newlands 2011, 04-06)

Social media and content marketing are familiar concepts that incline to creative aspect while the more technical perspectives are given to PPC, SEM, affiliate marketing and SEO. PPC, SEM and affiliate marketing are internet campaigns to be paid to form interactive channels. PPC and SEM drive traffic to the site by online ads while in affiliate marketing, a company will pay for each lead or sale generated from someone from outside sources. SEO, on the other hand, is an optimising means to drive traffic to the site by organic searches on the search engines. (Newlands 2011, 182-183.)

In relation to the theory of app search optimisation, SEO is the online means promoting web pages that becomes a part of the app search optimisation approach. Details about SEO and its role in the app store optimisation process will be revealed in Chapter 3.

2.2 Mobile Marketing

The number of mobile users has been growing strongly. The tremendous growth in the mobile usage from 2007 to 2015 reported by Smart Insights (2016, in comScore 2016)

depicted in the figure 2 proves that point. The graph shows the equilibrium point where the amount of people using mobile devices equalled the number of desktop users in 2014, then mobile users reached up to 1,900 million people in 2015. Statista (2016c) also predicted the figures would increase annually and achieve 2,659 million in 2019. These stats show that it is more potential to exploiting mobile communication than solely use web-based services.

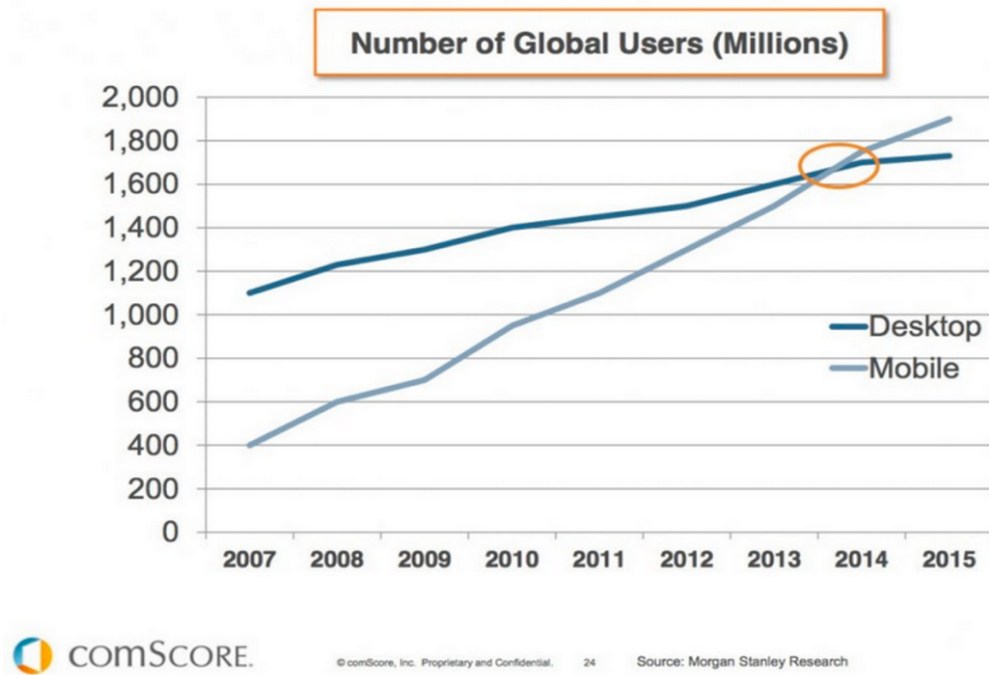


Figure 2. Number of global mobile users 2007–2015 (Smart Insights 2016)

Mobile marketing aims to deliver marketing messages on mobile devices like smartphones, tablets, and gaming consoles involving various activities. The specific types of businesses offering services on media, online-based services, e-commerce, and technologies have actively been using mobile channel in their strategies. (Marketing-Schools 2016.) Many other players have found to make use of mobile marketing. Mobile marketing encircles broadly interactive activities like mobile applications, mobile ads, SMS, mobile search marketing as in figure 3 (Krum 2010, 06).

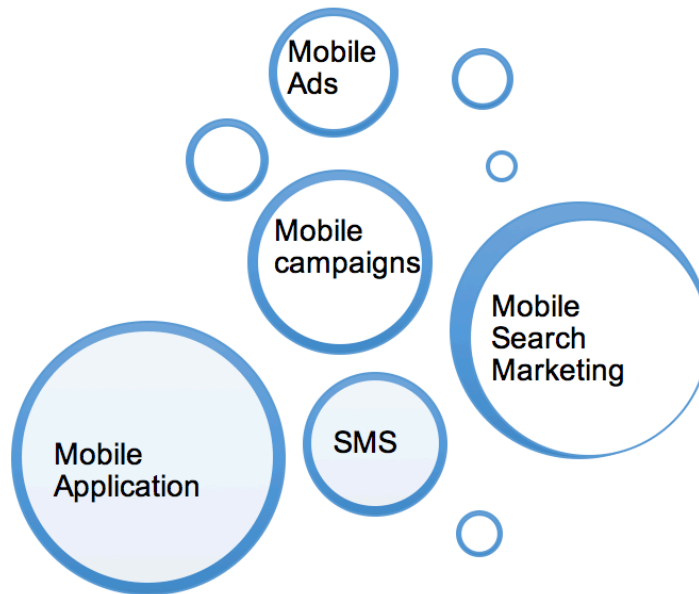


Figure 3. Mobile marketing activities (Krum 2010, 06)

Mobile tactics do not have any limitation, so marketers can get started any time and experiment many mobile campaigns (60secondmarketer 2015). Mobile web application should be customised into the mobile-friendly version that automatically adapts with mobile devices when opening the traditional web application (Nicol 2011, 86).

Nowadays, mobile phone has been the most used device among others. People use smartphones for calling, messaging, reading news, checking emails, surfing internet, etc. It, thus, contains all valuable information such as users' interests, types of music and videos they are interested in, contact address that when being authorised for access, businesses will receive extremely important info about their customers, which connects advertisers and users in a very personal level. (Krum 2010, 07.) SMS and multimedia messages are the fast and easy ways to inform new offers. They are pretty flexible with high impact because mobile messages maintain its full role to smartphone users. Smartphones have GPS embedded that encompasses location sharing help businesses understand what a user is looking for at the certain time for offering services using SMS or WhatsApp. Likewise, mobile application is a critical part of mobile marketing that worth to be considered for further development. (Blyth 2011, 137-139.)

It is important to have a good strategy for mobile marketing as mobile messages in many cases end up in spam folders or get blocked by users. Best practices to plan a good mobile strategy provided by Elsevier (2009) including the following issues:

- **Create value proposition for mobile strategy:** deliver brief, cohesive and impressive messages in the right time at the right place.
- **Engage with users:** create good messages transferring benefits to users that get them more active to interact.
- **Analyse customer behaviour:** using different campaigns and interaction to target right customers and to know what customers are interested in.
- **Avoid stuffing messages** that make users overwhelmed and intentionally ignore and unsubscribe the next offers.

Mobile apps as part of mobile marketing is a crucial piece of app store optimisation tactics. Optimisation for improving app visibility in the app stores is considered as a SEO method for apps, it is particularly called app store optimisation or ASO. This will be explained thoroughly in Chapter 3.

3 App Search Optimisation

This chapter presents theoretical concepts and descriptions belong to app search optimisation project which is divided into four parts. First of all, there is the reflection search engine optimisation and its factors in web optimisation. The second part tells everything about the app store optimisation including on-page and off-page factors. The two first parts contribute strongly to the app search optimisation process, which explains the substantial merger of them in the third part. Key components of the app search optimisation are visualised in the fourth part; the components are mentioned to enable businesses to maximise their work performance.

The purpose of this chapter is to formulate definitions and catch up professional knowledge of search engine optimisation, app store optimisation and where they meet to help business increase brand presence (figure 4). This points out why ASO has evolved to be a powerful weapon for businesses and the merger of ASO and SEO has become a prompt action should be taken straightaway.

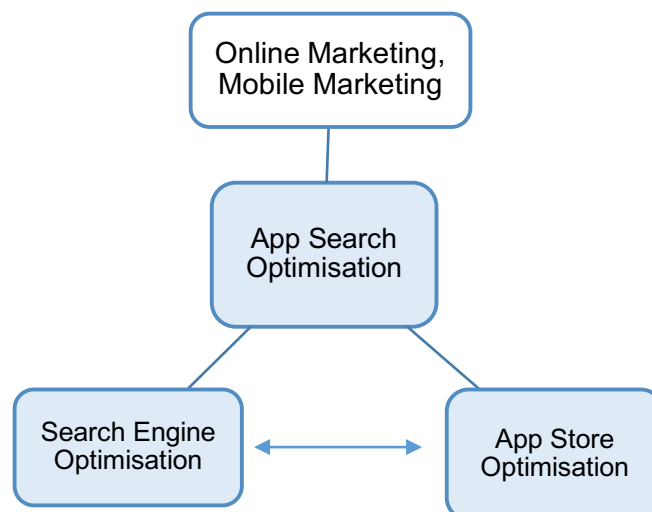


Figure 4. Visualised theoretical relationship for the App Search Optimisation

The theoretical framework in this chapter is studied from diverse sources for providing reliable knowledge of the app search optimisation. It consists of the accumulation of existing knowledge and updates of business trends in current market.

3.1 Search Engine Optimisation

This section gives an overview of SEO concepts and its tactics. Diverse ideas are given to prove the essentials of SEO. Moreover, on-site and off-site factors are discussed carefully together with the provision of online supported software to facilitate the implementation stage.

3.1.1 The Importance of SEO

SEO is a powerful tool that helps increase a company's presence on the search engines. According to the research from IProspect, organic search wins 250 percent more traffic than the normal paid search, at the same time the organic search drives 30 percent higher traffic than using the Pay-Per-Click (PPC) approach (Thomas 2011, 137).

SEO uses technical settings to attract traffic to the sites in the basis of organic search, yet SEO does not just simply attract unclassified traffic, its purpose is to spot out right audiences who are potentially converted into leads and sales. Organic search is seen as an ideal way to gain the right traffic. According to Thomas (2011, 139), it seems more appealing to click in the organic listings than in the paid ones as people tend to assume that paid ads are not the exact sites what searchers would find useful information. SEO activities are done to generate organic sources, which may or may not costly as the paid ads. Marketing effort, in this case, is to put people in charge of the optimisation tasks. This is a long-term investment, thus requires budget allocation. However, the results are worth waiting.

The most popular search engines in the current global market are Google, Yahoo, and Bing (Newlands 2011, 148). However, there are different browsers are preferred to use in each country, appropriately SEO practitioners need to learn the markets carefully before choosing the right place for developing the SEO project. Data collected by Return On Now (2016) reflects that Yandex is the market leader in Russia with 58 percent shares, Baidu is the most used engine in China accounted for 55 percent of total users in 2015, while 77 percent of South Korean browsing in Naver in 2015 (figure 5).

Search Engines - 2015 Stats					
Country	Leader	Share	Runner-Up	Share	Internet Penetration
Argentina	Google	92%	Yahoo	3%	75.0%
Australia	Google	94%	Bing	4%	89.6%
Brazil	Google	95%	Others	6%	54.2%
Canada	Google	87%	Yahoo	6%	92.5%
China	Baidu	55%	Qihoo 360	28%	49.5%
Russia	Yandex	58%	Google	34%	61.4%
Saudi Arabia	Google	94%	Yahoo	2%	65.9%
Singapore	Google	92%	Yahoo	6%	82.0%
South Africa	Google	93%	Bing	4%	49.0%
South Korea	Naver	77%	Daum	20%	92.3%

Figure 5. Market share of search engines by country in 2015 (Return On Now 2016)

People are surfing information, products, services, stories and many things everyday. When someone is browsing on internet, he tends to use short keywords or short sentences, then he checks the websites appearing on top. If he can not find what he expected, he would change the keywords and continue finding needed info on the top of the SERPs. There are surprisingly tons of sources on internet to be checked. It has become problematic for searchers to filter the massive products and services around the world and even harder for businesses to get noticed among many competitors. The websites with higher rankings will jump to top which generates far more traffic than the ones ranked lower or the ones appear on the next pages. SEO helps the company improve rankings and become more findable in the daily search. SEO listings create the fastest gates to lead people to the websites by learning customer behaviour online. (Newlands 2011, 148.)

3.1.2 On-site and Off-site SEO

SEO tactics include three main things that is necessarily focused to advance work performance, which are architecture, content and links attachment. When browsing something on internet there are thousands of spiders sent out to surfing equivalent contents. A list of sites that fits the request are shown on the search engines. Web pages with the more organised structures will be prioritised by the bots during scanning process. At the same time, elements of content are equally important to improve the search rankings. Components like blog posts, social media posts, content titles, etc. are worth considering. Many blogs have been ranked high on the search engines because of the fresh and reliable

contents. Internal and external links, moreover, should be attached in the blog posts to navigate people to the next contents or pages. (Thomas 2011, 143.)

Marketers need to make sure contents are consistent and errors-free by creating 404 error page (HubSpot Academy 2016). This 404 error page will help redirect users from wrong links to right pages by giving page suggestions and search tool as in figure 6.

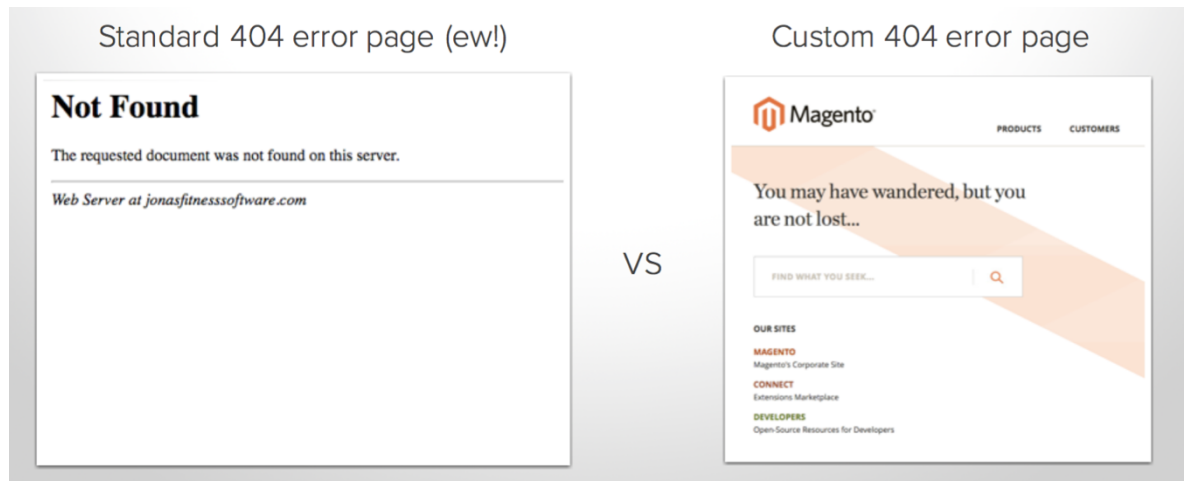


Figure 6. 404 error page customisation (HubSpot Academy 2016)

The SEO goal is to bring web pages to the top SERPs. To accomplish that mission, both on-site vs. off-site SEO activities need to be implemented successfully. On-site SEO approach concentrates on planning keywords, title and content testing and optimising. It generates matched algorithm to support search engines to find the contents. Keywords planning can be done using different online tools regardless to company's strategy and resources. (HubSpot Academy 2016.). Examples of good tools for keywords research are Wordtracker, Google Keyword Planner, or Semrush. While researching keywords, it is important to target two or three short tail keywords and adjust those into long tail keywords which brings out best values. Important places to add keywords are page titles, headlines, main texts in content creation, links, alt texts, meta tags and meta descriptions (Michael & Salter 2008, 71). These elements have primitive provision as follows:

- **Page title** is absolutely vital and must contain keywords as spiders give more weight to it when crawling across the sites (Michael & Salter 2008, 71).
- **Headlines** should have long tail keywords and convey the topics that target audiences possibly want to learn about, while body part is written in a compelling way (HubSpot Academy 2016).
- **SEO title** length arranges from 50 to 60 characters which is converted into 512 pixels wide in Google search engines, longer titles will be cut off and shown in an ellipsis "...". It deserves time investment on writing an appealing title with keywords that not only fits search engine requirements but also be relevant for social media sharing. (Moz 2016.)

- **Links** like permalinks, internal links, inbound links add big values to the contents, especially blog posts. Permalinks decide the content titles to be shown up in the URL while internal links drive people to other related posts of the site. Inbound links are the navigated links mentioned by other websites which is considered more trustworthy to the search engines based on online mentions. (HubSpot Academy 2016.)
- **Meta description** is seen as a summary of the content in the SEO scenario. It is the place for conveying main theme of the post to give audiences temptation to click into in the SERPs. (Michael & Salter 2008, 73.)
- **Alt text** is done to describe images. Images are not found by the search engines, alt text plays as content description to help spiders find the images and include them to the images' search pages. (Michael & Salter 2008, 71.)

Off-site SEO is extremely important but misused by many marketers and app developers. Factors of off-site activities not only help track the number of visits but also analyse the visitors and build buyer personas for the company. Off-site activities record the number of visits and hits, page view, unique view, referral, real-time overview by locations, events and conversions, to name a few. These are useful information to analyse the success of on-site SEO and marketing campaigns. Analysing off-site components are worth to do by many reasons:

- Tracking which campaigns work and which do not
- Checking user experience at what pages are visited the most and what posts generate more clicks
- Find out sources of the traffic
- Keep the site consistent and avoid errors.

There are many internet tools are used to accomplish the off-site purposes. The analytics tools are provided in the following table:

Table 2. Software for SEO analyses (Michael & Salter 2008, 85-87)

Tool	Purpose	Web example
Deep submission tool	To submit deep pages to search engine crawlers and directories	http://www.prioritysubmit.com/
Multi-submission tool	To submit the website to multi platforms of crawler-based engines and human-powered engines at the same time	http://submission2000.com/
Tracking tool	To check website's rankings in the many search engines	http://www.trellian.com/

Page analysis tool	To analyse all factors of a page to optimise as a perfect page	http://www.bruceclay.com/
Keyword analysis tool	To find the popular words out of other words	https://adwords.google.com/
Meta tag check	To ensure right coding in the meta tag is being used	http://www.clickfire.com/
Bidding manager	To optimise the paid listings	http://www.topseos.com/directories/ppc-bid-management/

3.2 App Store Optimisation

ASO as app store optimisation is a set of optimising activities being done to improve app rankings in the app stores. ASO elements are applied by combining technical settings and marketing techniques to increase app visibility. (Nativex 2016.)

Benitez (16 May 2016), Marketing Director at Javelo, stated that “search optimisation is the art of making your product or services be found online. Since apps are distributed through the app stores, you have to optimise your app’s page in order to be found by potential users. A well optimised app store page will not only be able to be found by users, but will also give you a chance to be featured by Apple/Google on their app stores. Search and feature will help your app be more visible and be found by more potential users.” For that reason, the implementation of ASO becomes very important.

3.2.1 The Prospect of App Market

Mobile applications are offered in the app stores of all operating systems such as iOS contains apps in iTunes and the App Store, Android market in Play Store/ Google Play, Windows users download apps in the Market Place. Statista (2016) revealed the total number of applications in the two most popular app stores Android and iOS, Android mobile system stored 2,200 apps in the meanwhile iOS apps accounted for 2,000 of items in the Apple Store. Furthermore, Nielsen & Budiu (2013, 34) stated that 74 percent of mobile applications were used comparing to the mobile web services which composed of 64 percent. This means mobile app has developed to be one of the solid parts of mobile strategy nowadays.

A report about app marketing from Forrester (2016) stated that paid ads via internet advertising like cost per install will last long but not as dynamic as it used to be. The number of apps will increase everyday and the market is still competitive; however, the desire of making apps stand out among thousands of others by highly investing in online campaigns along with the increase number of marketers makes the advertisement activities saturated. Investment on ASO, thus, is predicted to be more and more important in the near future. App analytics statistics like user engagement, customer retention, number of usage are the focusable components to build definite customer relationship in the long-term app optimisation and development.

According to Cohen (Forrester 2016), Vice President Marketing at mobile marketing agency Moburst, invest in app analytics and master ASO is the immediate actions for marketers. To stop wasting money, marketers should use data such as post-install attribution, engagement, retention, and lifetime value to modify budget for acquiring new users.

3.2.2 Principles of ASO

There is no direct ads campaign can be made in the app stores. The app stores will feature an app based on its popularity and credibility. People tend to be more convinced to buy something that other people have used and well-reviewed. An app with good reviews and ratings from existing users gain great credits to rise up downloads. This sends a trusting signal to app stores to arrange the app a position in the featured page where it is believed to accommodate apps with best values and user experiences. (McWherter & al. 2012, 27).

Marketers are deemed to find the right audiences who are potentially converted into leads and sales. Knowing about users is a great support to the success of app store optimisation. This step has to be analysed from the very beginning when launching an app. Gathering enough info of prospects and potential leads, marketers are able to find right direction and strategy for optimising apps aligned with users' needs using right elements. (HubSpot Academy 2015a.)

App store optimisation components are packed into on-page and off-page dimension. On-page factors include elements on-app like app title and description, icon and screenshots, keywords, app categories, previews/ demo videos, reviews and ratings. Off-page elements comprise of analytics activities such as customer engagement, click-through, server speed, number of downloads, etc. Many businesses have failed to investigate off-page activities to understand user behaviour and app performance analyses. Off-page factors

are actually very important do work on besides on-page's. The combination of the two factors will maximise the efficiency of app store optimisation. (Nativex 2016.)

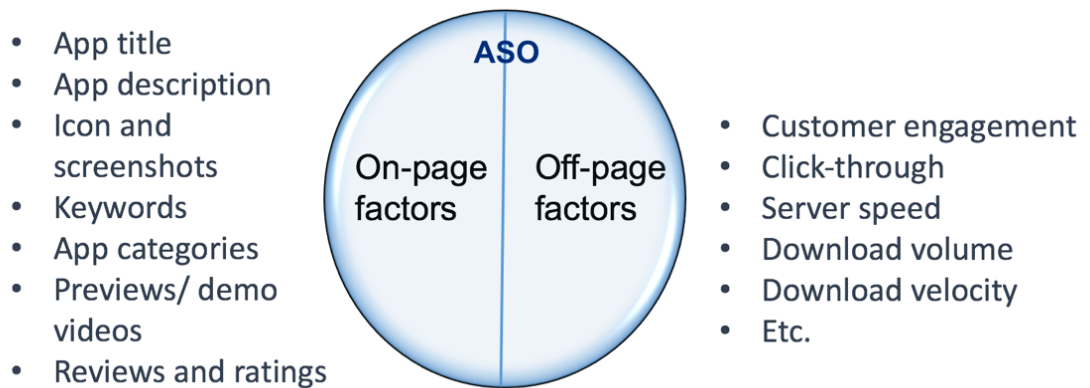


Figure 7. On-page and off-page factors of ASO (Nativex 2016)

App stores are smart the markets that users can easily find an app they wish by using the filter function and featured apps. Choosing categories is one of the important moves in on-page ASO, even though it only shows proven effect in the iOS operating system. There are bunch of categories users can use to search for apps, learning categorical trends in app stores will help marketers understand their target customers, and make suitable adjustment accordingly that could pass to downloads and leads. (McWherter & al. 2012, 26-27.) Some categories are obviously preferred searching than the others, such as Games (16%) and Entertainment (11%), in contrast to Shopping (1%) and Medical (2%) (McWherter & al. 2012, 20). The update on category interests in the Nielsen (2015) research also presented the most popular categories found in app stores as in figure 8. This reflects that the trends have changed very fast and it requires marketers to catch up quickly in order to create relevant marketing strategies.

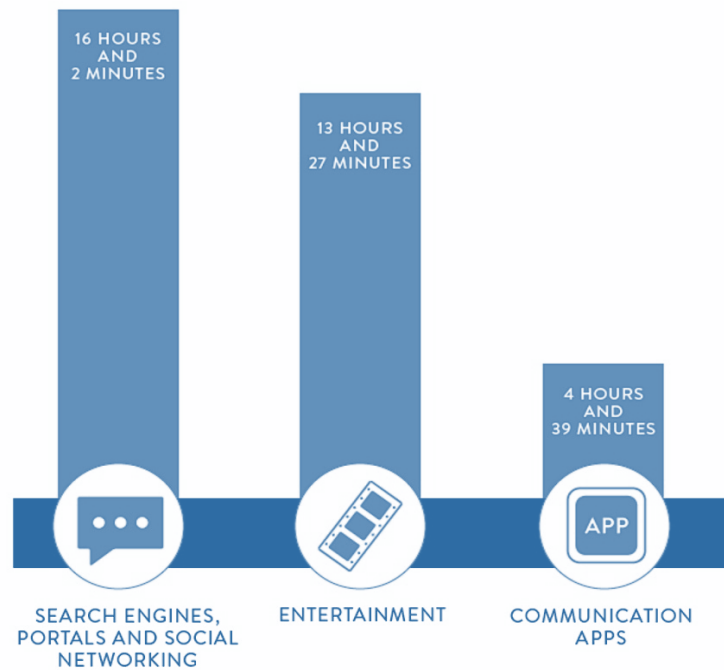


Figure 8. The most popular app categories based on time spend per month (Nielsen 2015)

In on-page factors, app names in the app stores are the most important component of all because app stores get their algorithms to count the index app names as the searching keywords, so it is important to add such vital words to the app names for advantage (Nativex 2016). There are, however, different requirements for app rankings' elements between Apple Store and Google Play. App description, particularly, controversially play an important role in app store optimisation. Good description seems to motivate people to download an app when they are wondering. The app with catchy and informative description with strong keywords included will get better attention. (McWherter & al. 2012, 28.) In the meanwhile, description has much lower impact in the Apple Store compared to Google Play due to the difference of keywords targeting. In Apple Store it is preferred to list out singular words for the keywords category and app ranking is decided based on these words. On the other hand, Google Play does not have focused keywords, it reads keywords in the title and description to understand an app. That is why app title and app description are only equally important when optimising the Android apps. (Nativex 2016.)

Keywords planning is a sparkling element in app optimisation. In Apple's app store, app names having keywords enclosed are expected to increase 10.3% in comparison with keywords-free names. Google Play also moves up ranking of an app to 100 positions by scanning keywords in app name and description. Likewise, developer name represents an organisation and has an excellent impact on app stores' rankings. (Nativex 2016.) Table 3

displays the noteworthy principles of ASO plan and implementation that help greatly boost conversion rates and click-through rates.

Table 3. Essentials of ASO on-page components (Nativex 2016; Pmg 2016)

Component	Things to remember
App name	Search results show only 25 first characters in Apple Store even though the limited number is up to 225 characters; 30 characters are used in Google Play.
App size	Smaller-size apps are faster for download and quicker in use.
Description	Keep the most attractive info in the first three lines as these sentences are displayed in preview session (167 characters), even though 4000 characters can be used to describe an app.
Keywords	100 characters for keywords in Apple App Store, Google Play does not require to list out keywords.
Icon	Test icons and choose the one with most stand-out and give best performance.
Screenshots and app previews/demo	Storytelling is the powerful way to convey business idea, use video trailer is a good way to introduce products or services better.

Off-page factors are a sequence of in-side activities that ASO practitioners should study thoroughly. The most important stats in off-page analytics are total amount of downloads, download speed in specific period of time, and click-through rate. The more download turns and active engagement of users, the higher impact the app will potentially increase ranking. Other issues like reviews and ratings do not strongly influence the way apps are ranked, yet bad reviews decrease the apps' reputation which indirectly affect the app rankings that downturn number of downloads, reversely influence app rankings. (Nativex 2016.) Reviews element is collectively processed in both on-page and off-page; however off-page reviews mean to collect the third party's opinions about the app. It can be found in forum discussion, social sharing, and other referrals. Interacting and listening to users and fix their problems in case of errors is vital to gain public trust. (Benitez 16 May 2016.)

3.3 SEO and ASO Merger

App store optimisation is a currently popular trend for mobile strategy. It includes a set of planning, implementing, and follow-up activities for the direct searches in app stores; meanwhile search engine optimisation plays a vital role in the app search optimisation

activities to enhance exposure of products and services in the online market. These factors are widely applied by many businesses, yet the combination of them might be left out because of the shortage of information and slow rolling with new trends.

The considerable soar of app offerings in various industries such as games, social media, travelling guides has put the marketing activities under high pressure. Online integration has become a central place for sales and marketing activities up to now. Business trends have proved that the mix of SEO and ASO grows to be an influential factor to gain more app installs, app engagement, and encourage users to buy products or make in-app purchases. Benitez (16 May 2016) stated that SEO still plays its key role in internet optimisation for organic search while boosting the process of app discoverability, which encourages the ASO development in many levels.



Figure 9. SEO and ASO activities merging to create more leads

Forrester (2016) cited the Cohen's saying that "Because of deep linking and app indexing, ASO will start merging with SEO in 2016". The prediction is critical in the current digitalisation when the search engines have been offering bunch of new features to create best user experience in terms of browsing settings.

App deep linking is the function where SEO and ASO meet up due to the indexing techniques connecting the search engines with the app stores. A case to be mentioned is that IMDb app has installed on a smartphone, if using the same smartphone to search on Google search engine by "The theory of everything" film reviews will show details of the film right on Google SERPs without opening the IMDb app. The search engine asks the user whether he or she wants to open the app for more information or read directly on the search engine, in case the IMDb app has not set as default. If the app has not been in-

stalled, Google search engine will give suggestion on top of the page encouraging to install and directing the user to the Google Play Store for downloading the app. (Adapt Word Wide 2016.) Figure 10 below visualise an element of app deep linking.

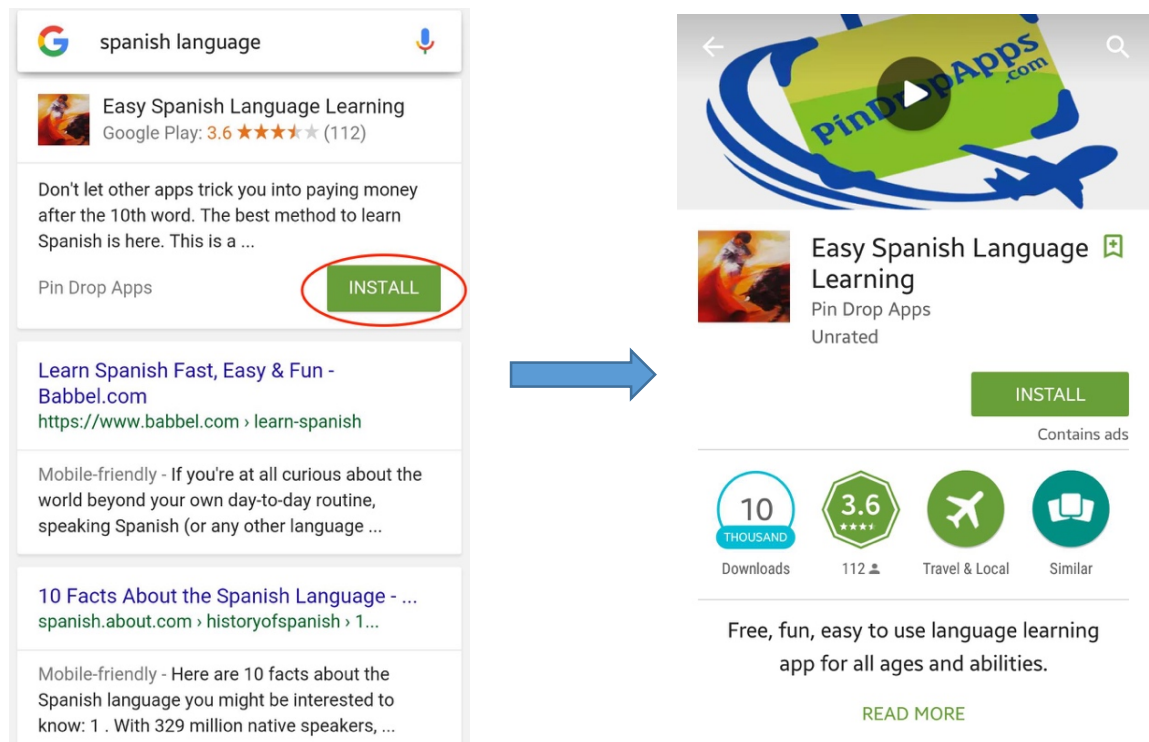


Figure 10. App indexing in a Google search engine result page (Google 2016a)

App deep linking setup for mobile app generates substantial benefits by strong support on the search engines. It obviously helps increase the number of installs amid the install button is shown on top of the page. Approximately 20 percent of apps are downloaded and used only couple of times, so deep linking functions to recall users about the existing apps that improve user engagement, consequently get users to probably purchase the products or services. Otherwise, app indexing on the search engines drives traffic to the app page that promote brands and enhance app awareness. App indexing works effectively in Google Play enabling an app to be ranked higher which is seen as an app ranking criteria in Google Play Console, contrary to Apple App Store. (Adapt Word Wide 2016.) The process of deep link implementation is tutored step by step on Google Console Help and in the iOS Developer Library. The universal links technique supports solely in iOS 9 devices.

A new function in the search interface called App Pack has been testing by Google lately. The launch of App Pack is to curtail browsing in Google Play Store and find related apps directly from the search engines, despite the amount of searchers remains high percentage in the app stores. This creates both opportunities and drawbacks for businesses to

create linkages between SEO and ASO to fulfil App Pack ranking mission. Authorisers of the search engines have not released data showing how the apps are optimised to appear in the App Pack, yet ASO, especially keywords implementation is predicted to play a major part in influencing app stores' listing decisions. App Pack contains from one to six apps in the package, it is extended by opening the “show more” symbol (figure 11). Moreover, App Pack possibly brings dramatic impact to the apps sorted as it uplifts the app discoverability and brand awareness. (Search Engine Land 2016.)

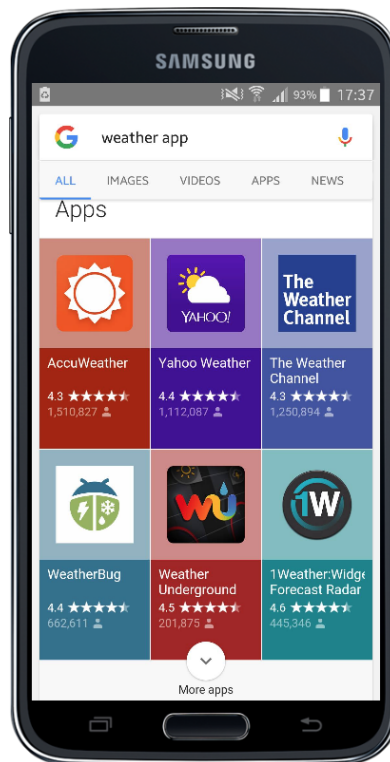


Figure 11. App Pack for Samsung galaxy S5 Android phone with suggested list of reliable apps by Google search engine (Google 2016b)

App Pack is presented differently in different devices based on users' enquiries and search habits. The strong apps are pretty much prioritised and put to top of the mobile search while less power apps might be sometimes placed at the bottom of the search pages. High ranked apps appear in the App Pack possibly acquires the same high rankings in Android app stores as Google uses its particular algorithm for matching contents and search enquiries. Additionally, many aspects of ASO, SEO and the utilisation of app indexing earns the positive assessment for the App Pack rankings. (Search Engine Land 2016.)

3.4 Remarkable Components of App Search Optimisation

There are plenty of components supporting the implementation process of app search optimisation. This section will focus on the most important issues which consist of buyer personas, keywords research, content creation strategies. Buyer personas relate to customer behaviour and user segmentation that should be taken into account from the first planning steps. In the meanwhile, keywords planning generates the great assistance during the contents creation and pages optimisation.

3.4.1 Buyer Personas

Consumers come from various sources that are referred by online and offline marketing activities, or else referrals from blogs, friends' posts on social channels, and word-of-mouth. In the traditional marketing, customers are the passive audiences whose profiles are gathered together based on facts, personal data, and customer experience (The Huffington Post 2014). On the other hand, internet advertising targets to the more active users. These consumers are the ones deciding which pages to click on and what services to use under control. (Kotler & Armstrong 2010, 530.) Despite how passive or active audiences are, businesses need to define their targets to reach the right traffic at the right time, convert them into leads and close the deals. Buyer personas research are crucially important to fulfil that request.

Buyer personas are done according to the actual researches and analyses. There are many factors worth thinking of when listing the buyer personas, some of whom include key background of the target audiences, demographics, goals, challenges and solutions that company can offer to solve users' problems. Good strategy in exploring buyer personas facilitates excellent customer's journey which pushes the decision making process from the users (figure 2.7), simultaneously helping build relationship for the long-run perspective. (HubSpot Academy 2015a.)

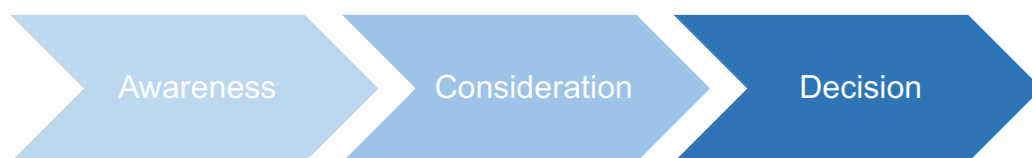


Figure 12. Customer's journey (HubSpot Academy 2015).

Choosing buyer personas depends on industry, company segmentation, products/ services-based platform, so on. Companies offering services via applications get additionally heavy tasks to do when studying customers' profiles since they are distinct in web traffic and mobile usage. Although core customers may contain similarity in choosing a certain product, the variety of user backgrounds and demands are crucial to learn. There are many ways to discover buyer personas for a business stated by HubSpot (2015) as follows:

- Analyse internal database of users, leads, and customers
- Businesses have certain things to concern about their customers, so the businesses should choose the most important categories to request when asking people to fill the sign up form
- Talking to sales team to understand types of leads they have major interacted
- Set up Skype meetings, interviews, webinars, phone chats etc. to collect feedbacks and discuss further with customers about products or services.

3.4.2 Keyword Planning

Researching on keywords is one of the most important sectors in apps and sites optimising activities. Users search particular issues by their own words, hence marketers should put themselves to customers' shoes to understand them better. Blyth (2011, 34-35) voiced that research the relevant keywords and repeatedly use them in a post help the page receive better credits from the search engines. Contents and title tags are scanned through when the search engines receive an enquiry. To such a degree, place keywords to the title, the body copy and optimisation features creates better chance to be findable in the search engines, however marketers need to cleverly treat the words as overusing the same words would cause harm simultaneously.

In website optimisation, search engines discover pages by sending out spiders across internet and creating a list of relevant and trustworthy pages accordingly. The scanning process is smart; therefore, it is important to continuously conducting and testing keywords that make good impression to the search engines. These keywords are used for content marketing like the blog posts, articles, whitepapers, social media publishes, they are also valuable for SEO and ASO headlines and contents testing. When placing keywords in a page for the SEO purpose, it is essential to consider the buyer personas of what they will potentially type in the search engines. One trick for researching keywords is to learn analogous words in the search engines as they always give suggestions and alternatives for a certain keyword or phrase; for instance, alternatives for "management" in Bing are "management styles", "management skills", "management information systems"

and so on. These keywords show the popularity of searches that are valuable for keywords planning process. (HubSpot Academy 2016.)

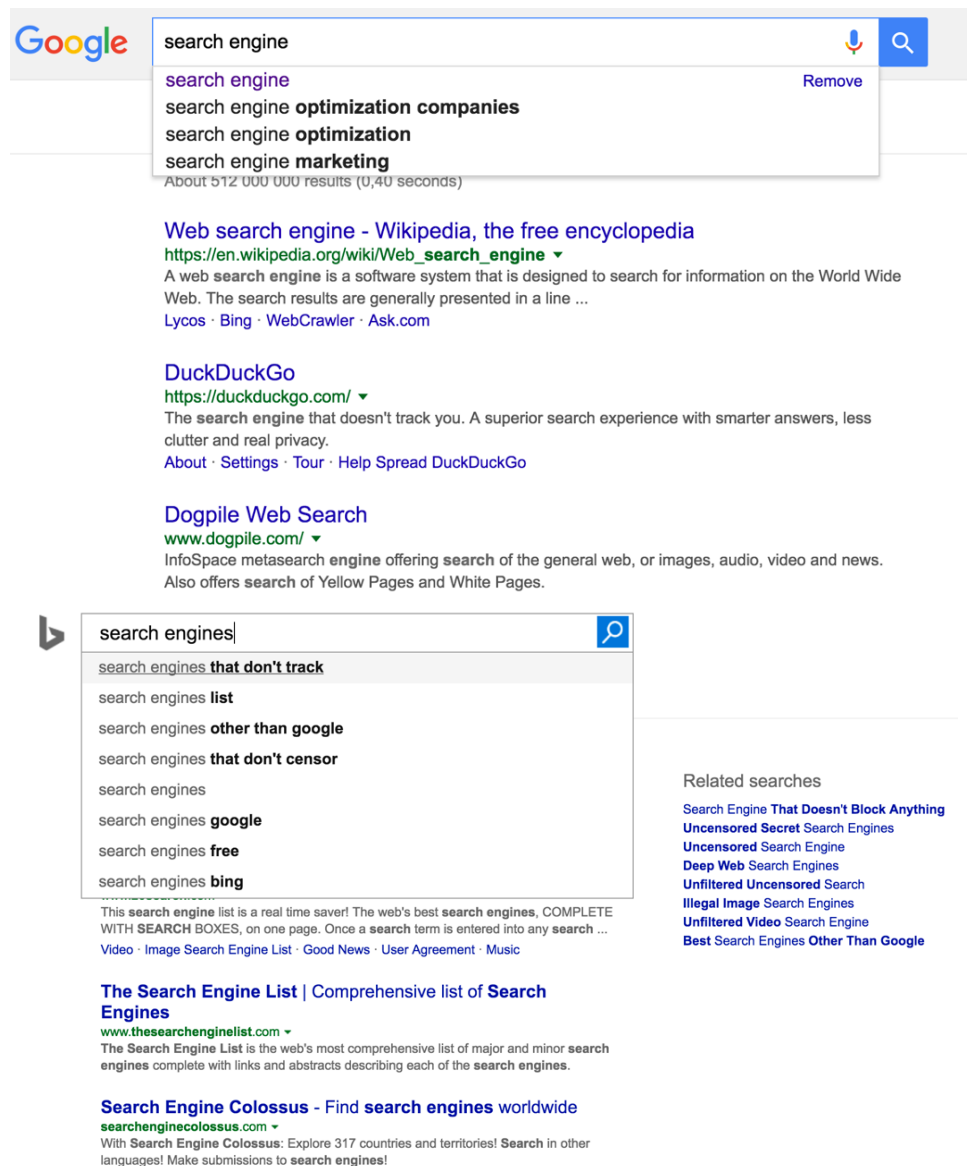


Figure 13. Alternatives for keywords planning in the Google and Bing search engines (Google 2016c; Bing 2016)

Keywords include two kinds which are short tail and long tail. Short tail keywords are the ones with high volume searches. It is straight to the things that people want to look for on search engines like for example “SEO checklist”, “jewellery”, “online marketing”. These short keywords can be easily researched using online analytics tools like Google AdWords in order to choose the popular words with low competition. Long tail keywords, on the other hand, are phrases frequently inquiry by users such as “best SEO strategies for start-ups”, “how to clean silver necklace shining”, “practical questions to prepare for a successful interview”. (Newlands 2011, 149.) Long tail keywords are assessed to creating

better outcomes with low costs and less competition in that they are more specific to the topics, and it shows exactly what the content is about and what a company is offering. Long tail keywords might not be typed directly the same in the search tools, yet the pages with long tail keywords optimisation tend to appear in top listings that generates extra benefits. (HAAGA-HELIA 2015a.)

3.4.3 Content

Content marketing has evolved dramatically due to today's digitalisation. A research from Content Marketing Institute (2015, in HubSpot Academy 2015b) reported that 35 percent of B2B companies and 37 percent of B2C businesses operate content strategy. Content is king as it manifests online sources. Content marketing composes a set of countless activities such as blogging, email campaigns, press release, social media, and landing pages. (Thomas 2011, 54.) Among all, Newlands (2011, 88) claimed that blogging is one of the most effective means in managing content strategy because of its straightforward communication with audiences. Moreover, writing business blog posts enables the pages to gain exposure in the search engines' listings.

SEO and ASO are technical tools to increasing a company's visibility on the search engines and app stores, contents come first in order to accomplish app search optimisation's mission. Without contents, online environment would be empty and there would be nothing for users to search for. (HubSpot Academy 2015b.) Making a schedule and plan with specific themes for each posts influence strongly to driving traffic to the pages. Blog posts with the good structure, relevant keywords, images with alt tags and links attached are regularly recognised better by the search engines. In the app stores, keywords are extremely important, adding keywords properly in the title and description makes a great impact on improving rankings of an app. (Newlands 2011, 151.)

There are good practices that are useful to apply when creating contents. First of all, content should be made according to buyer profiles. Different groups of users can have specific requests, writing posts to fulfil such enquiries will create a good customer's journey and build closer rapport with them, potentially create more leads. Content, furthermore, is delivered as educational materials, the attachment of promotion elements probably entails bad impression to audiences. Besides the useful topics that transfer valuable information, content must be visual and easy-to-read to help audiences accessibly consume it. A vast of content management activities strongly affects the way a post or an app be found. (HubSpot Academy 2015b.)

4 Project Implementation

This chapter reflects the progression of App Search Optimisation project from the planning phase to the implementation. Search engine optimisation activities includes planning and testing the on-site factors together with analysing some of the off-site elements in the Javelo WordPress site. Besides that, proposal for ASO project based on Javelo's current situation is given. The App Search Optimisation project was supervised by Fito Benitez, Marketing Director of Javelo, who provides valuable opinions on the prospect of App Store Optimisation. The insight views of customer analyses are presented according to the statistics on iTunes and Google Play Console. Project evaluation was concluded as regards of online analytics tools which are Google Analytics and others.

4.1 App Search Optimisation from Scratch

Javelo uses WordPress as the website platform. The website has been updating and no SEO had been done before. All activities, thus, were modified to serve the very first optimisation steps.

4.1.1 Customer Insights

Klepik (The Huffington Post 2014) stated that B2C e-commerce has turned marketing communication towards personal level which means learning and solving consumer demands or their problems contribute significantly to the total online sales. This proves the importance of researching customer profiles, then planning the App Search Optimisation project accordingly to maximise the work performance.

Javelo customers are diverse. They appear to have different backgrounds with numerous demands and requirements in their searches. The research of visitor profiles plays an important part in the planning process that helps navigate the right audience to effectively implementing the App Search Optimisation factors. Table 1 depicts the key trend of customer manners in the Javelo pages.

Table 4. Key points of Javelo visitors' backgrounds (Google Analytics 2016; SimilarWeb 2016)

Gender	Male	41.50%
	Female	58.50%
Age	18-24	25.58%

	25-34		38.76%
	35-44		20.93%
	45-54		14.73%
Interests	Affinity Category		TV lovers, movie lovers, readers/ entertainment & celebrity, shutterbugs, travel buffs, etc.
	In-Market Segment		Travel/Hotels & Accommodations, Education, Dating Services, Employment, etc.
Language	En		48.69%
	Fi		19.16%
Country	Finland		30.33%
	US		21.36%
	UK		5.99%
	Others		Belgium, Canada, Brazil, Netherlands, Germany, Spain, Denmark
Visitor	New		78.14%
	Returning		21.86%
Channel	Direct		36.97%
	Organic Search		32.91%
	Social		21.72%
	Referral		8.40%
iTunes overview	Sources	Referrals	65.7%
		Social	34.3%
	Acquisition channel	Organic search	15 visitors - 9 installers (16%)
		Third-party referrals	21 visitors - 9 installers (43%)
	Country		US, Finland, Netherlands, UK, Germany
Google Play overview	Sources	Referrals	85.7%
		Social	14.3%
	Main market		US, Finland, UK, Canada
	Application type		Applications
	Category		Personalisation

In line with the figures in the table 1, there is no big difference between male and female buyers although the female sector accounted for higher visiting percentage. Popular ages

have been using the app are ranging from 18 to 34 while 35 – 44-year-old people are also the active visitors accounted for 20.93 percent. Many of whom were the new audience from different internet sources. The main ways they found the app were by direct search and organic search, while social media is also a lively source for attracting traffic. In the Apple iTunes, acquisition channels reflect that each 15 organic searches lead to 9 installs while 21 visits by referrals generate the same amount of 9 installs which means. However, the organic search accounts for only 16 percent of the totally channels acquired, one third of the referrals in comparison. This means that the organic search technique has not been developed enough to exploit its potential.

The official operation language is the American English, however the statistics recorded the additional languages used to for browsing are in British English, Canadian English, Finnish, and German which needs to take into consideration for the keywords planning and testing process to align with the localisation policy of online marketing. Moreover, Finland was ranked as the majority of visits which depicts the high potential of developing the Javelo jewellery services in Finland internally, besides the US market. Learning the issues of the buyer personas helps Javelo to redirect to the right direction to offer customer with the best experience and potentially generate more leads to Javelo afterwards.

4.1.2 SEO Kick-off

The SEO project for Javelo kick-started by preparing the implementation plan with the checklist of preliminary activities. The implementation plan is reflected in Table 2. The main tasks of the App Search Optimisation initially were to learn about Javelo’s operations and markets, and to find the best way to optimise Javelo’s site. The plugin for SEO purpose was called Yoast SEO, which is the most recommended tool for Wordpress in the market presently.

Table 5. SEO implementation plan with objectives and real actions

Item	Objective	Real activities
Keyword planning	Choose the best keywords based on buyer personals’ language and mimic them	Research keywords and phrases using Keyword Planner/ Google AdWords
Domain authentication	<ul style="list-style-type: none"> • Get prioritised on Google and Bing listings. • Target the search in the 	<ul style="list-style-type: none"> • Authenticate Google Search Console, Bing Webmaster Tools, Google Analytics by Yoast

	US market	<ul style="list-style-type: none"> • Verified friendly-search domain with https://www.jevelo.io/ https://www.jevelo.io/market/ https://jvelo.io/
Errors check	Prevent pages' errors and keep all contents consistent	Check 404 errors, duplicate content, missing titles, failed-to-access social media channels
WordPress site optimisation	Improve the visibility of the website in the search engines	<ul style="list-style-type: none"> • Plan keywords and test headline and description. • Use Yoast SEO to fill the web info: title, description, company logo, site icon, etc.
Blog posts SEO	Attract right people to the site. Combining SEO with content marketing	Add alt tags, featured image, blog tags, test SEO title and meta description; modify permalink and slug
Pages optimisation	Increase the pages' performance and reach wider targets.	Title, meta description, featured image RSS plugin to push new posts to news media Newswire platform.

The general checks for the Javelo's WordPress site included the optimising activities on domain authentication, errors check, pages optimisations, plugins management as follows:

- **Domain authentication** that got Javelo URLs verified in the Google and Bing search engines. This step helped register the Javelo domains officially to the search engine crawlers and directories, so search engines could easily find Javelo by using its own algorithm.
- **Errors** were scanned all through to make sure pages and info are correct to deliver to the audiences. There were some technical shortages in the Javelo pages when it was in the maintenance process such as missing titles, spacing errors, errors in social media bar, etc.
- **Optimising pages:** headlines, SEO titles and descriptions modification, logo in the URL address bar called Favicon, and so on.
- **RSS plugin** was added to get new posts' links to the media platform. RSS connects Javelo with medias easily by generating news feed links and directing them to the media channels.

Keywords Planning and Testing

Keywords were listed and tested during the execution of the App Search Optimisation project. There are many popular keywords for Javelo were found using Google AdWords. Appendix 3 shows the most relevant keywords from top downwards for SEO utilisation and for content creation. It is important to keep contents consistent and effective by re-

peating the suitable keywords but not too much stuffing them. The handy utilisation of keywords creates a good impression helping the bots encompass toward the pages.

Based on the search trends contents were adjusted so that the keywords were included to the posts cleverly. There were modish words, for instance, that worth being tested like “jewelers” with the average searches of 33,100 times with low competition during the twelve months from June 2015 to June 2016 (Google AdWords 2016). Hence, it is advantageous for Javelo to use this word in the title and description to improve the visibility in Google search results. The research of possible word usage was done comprehensively to choose the best keywords. The target market of Javelo is the US which means language and cultural habits were taken into consideration to narrow down the concentration. Geographic factor is part of the marketing strategies, comparison of product names like “jewelry” and “jewellery”, “charm” and “bracelet”, “necklace” and “accessory” was conducted to deliver best results.

SEO title and description are the premium elements in SEO. The title and description for Javelo front page were experimented as in figure 14. “Custom” with 74,000 search times in March was one of the most used keywords in the market while “design” was in the top search with 110,000 times within the twelve months (Google AdWords 2016). However, “custom jewelry” phrase gained 15 percent more searches comparing to “design jewelry”. The title with the “custom jewelry” phrase, hence, possibly gains more values to the site.

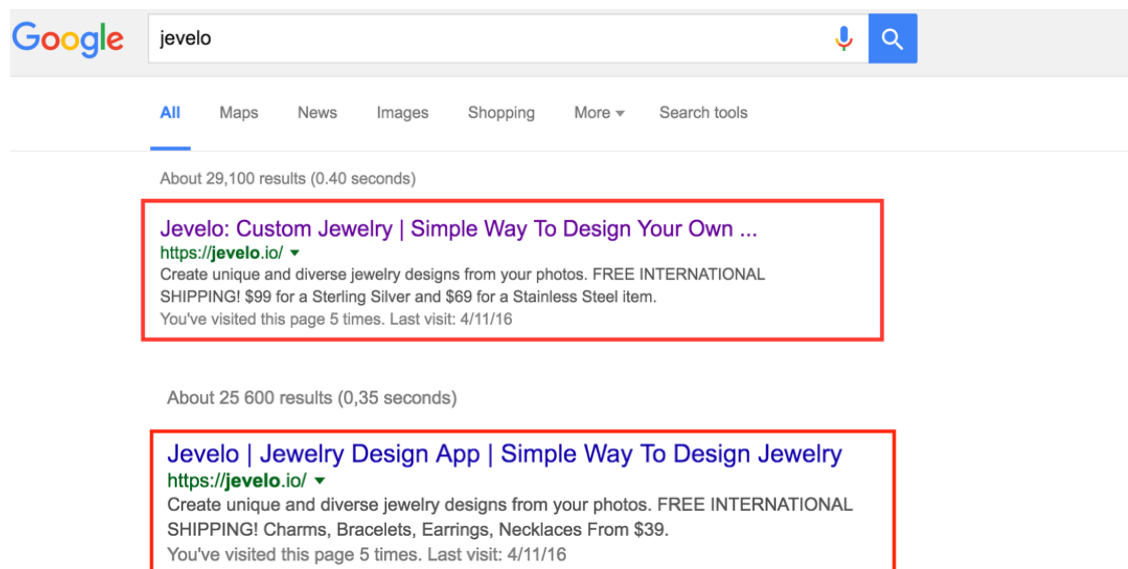


Figure 14. Javelo website display on Google search engine first and second testing (Google 2016d)

Blog Posts

Blog post is the centralised content marketing at Javelo besides the other types like video tutorials/ demonstration, case stories, industry news. Blog post is created frequently by three to four times per month with trendy topics and for the educational purpose. Such topics are about jewellery, stories sharing from Javelo customers, accessory trends, to name a few. The whole SEO implementation for blog posts that is obliged with the principles of SEO consists of:

- Yoast SEO with SEO title and meta description copywriting
- Create slug and permalinks
- Add featured image to each post and alt texts to the image
- Add Image Title Attribute
- A/B testing blog posts' titles and descriptions
- Analyse traffic of blog posts after implementing SEO

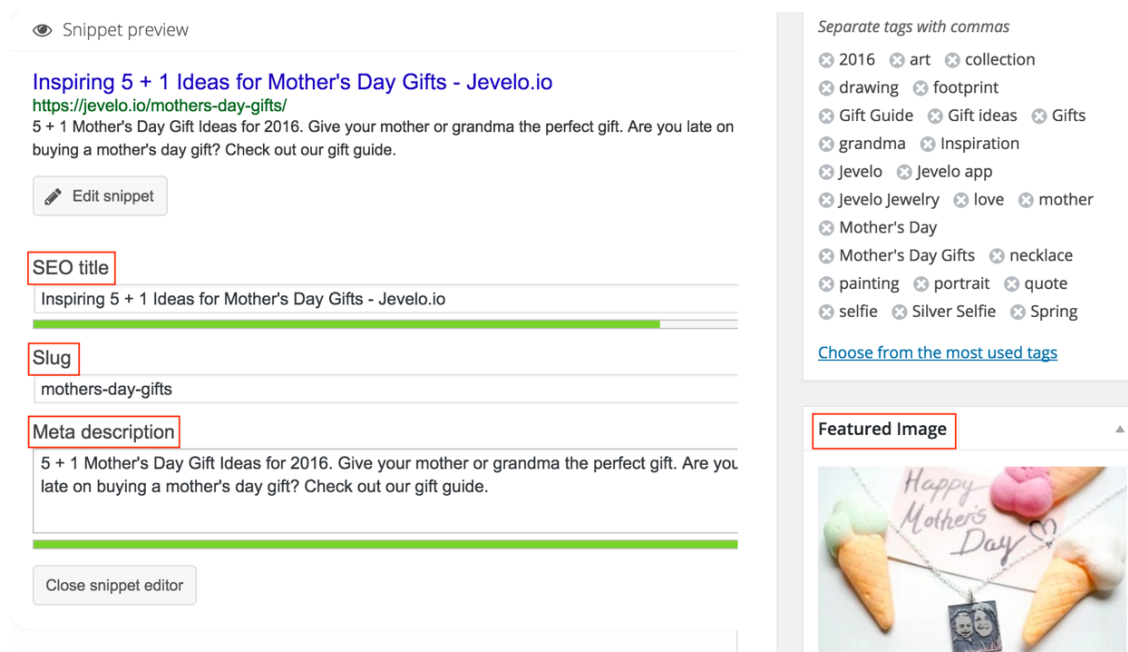


Figure 15. Sparkling on-site features of blog post's optimisation (WordPress 2016)

Javelo has had good connection with bloggers and vloggers who have written blog posts and tapped videos about their designs on Javelo app. This increases traffic to the Javelo site and at the same time increase the number of app downloads. Spreading such testimonials and positive feedbacks are crucially important to expand the brand visibility and awareness.

4.1.3 ASO Strategy Recommendations

According to Benitez (16 May 2016) from Javelo, the most important on-page factors of ASO include the app name, the app icon art, screenshots that deliver an engaging message, app preview/ demo, app summary, keywords and reviews from users who have downloaded it. In off page optimisation, essential elements need to be considered are website with a straight link to app's app store page, app reviews by third parties, user referrals, presence on articles and media, and any other type of online social mention. Main items among the listed on-page and off-page factors are mentioned in the following table:

Table 6. Factors for ASO recommendation

Item	Objective	Content
Keyword planning	Planning the relevant keywords for Google Play and App Store campaigns	Research keywords and phrases using Keyword Planner/ Google AdWords and online analytics tools
On-side factors	Find best way to implement various factors influence Javelo app rankings	Title, Javelo brand & logo, category, description, screenshots
Off-site factors	Analyse the influent issues for improving app performance	<ul style="list-style-type: none"> • Number of downloads • Ratings and reviews • Tracking and optimising keywords

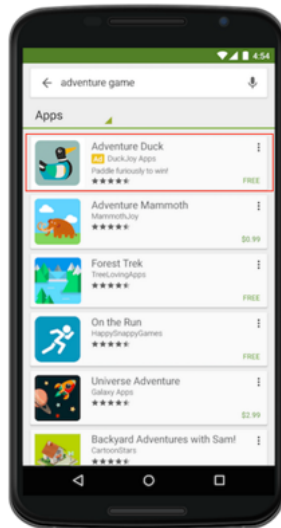
In the internal report by the online analytics tool SimilarWeb recorded statistics from May to June 2016, the four main keywords most used to find the Javelo app in Google Play Store are "jewelry", "droplet", "jewel charm", "necklace" while App Annie (2016) suggested extra keywords should be used in the Apple iTunes that were "unique", "top 10", "customize", "diy". Javelo app's description was good with targeted keywords, but lack of product names such as droplet, charm, necklace that may cause loss of a chance to be found by these words. In addition, it is also crucial to analyse competitors about who they are and what keywords as well as strategies they have used to engage with customers.

The mandatory sign-up requirement after installed makes many audiences afraid of doing extra steps. They can not see the app's values right away to make the move as people may want to have a try before signing up to ensure it is worth to spend time on. The sign-up requirement could make users uninstall or they just keep it in the phone without using which causes the loss of many potential leads to the company. A feature called first mode,

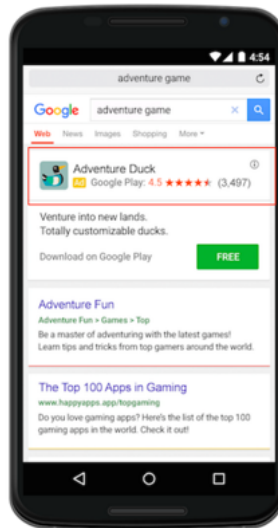
thus, should be implemented in this case. It means that users download the app, upload their pictures, and make their designs freely. Then they would be requested to sign-up for seeing the extra features like 3D review; saving designs: doing additional editing function; and sending to order. Javelo can offer some small campaigns like to offer 10-15 percent discount for the first-time sign-up, so it is encouraging users to register an account for placing an order. This sign-up process is very important for Javelo to collect users' background. Information consisting of date of birth, country, and email needs be collect in the sign-up form as a minimum requirement. There should be additional option for the users to register using Gmail or Facebook.

Ad campaigns should be done more often to boost the interaction with users and promote the app to strangers. It is worth to invest in paid campaigns, especially in this very first stage of Javelo's operation and development. Google AdWords offers tools in the Google Play Developer Console to remind users who have installed the app to re-engage with it. App's banner will be advertised in Google Play, Gmail, Google search, Youtube, and websites as in figure 16. Buying keywords is also necessary as keywords support greatly to the paid ads and strongly influence the ways Javelo app be found.

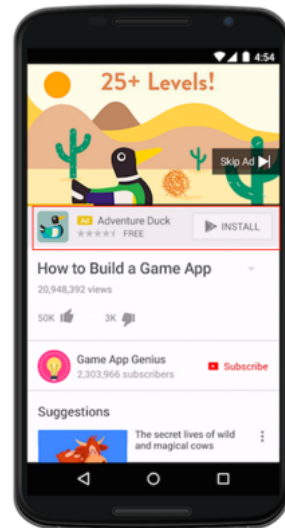
From Google Play



From Google Search



From YouTube



From apps

From the web

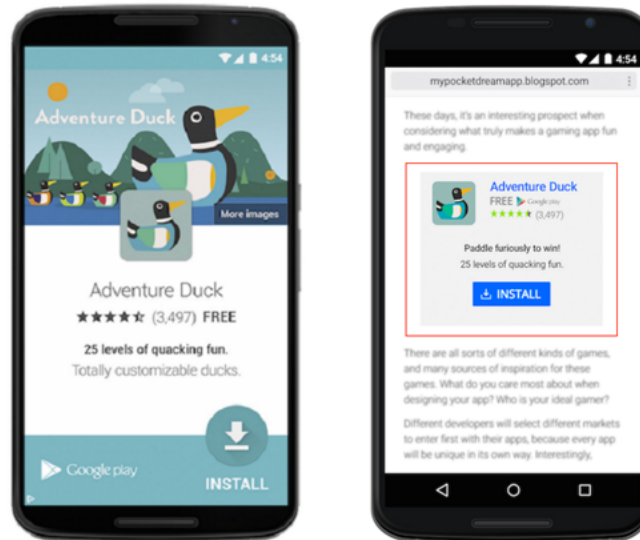


Figure 16. How ads campaigns by Google AdWords look like (Android Developers 2016)

Off-site factors are extremely important to dig in. These factors give the comprehensive picture of traffic and customers. Issues should be analysed are for example installations, user engagement rate, leads generation, active devices, and retention. Together with the sign-up stage, these facts provide Javelo with excellent information to draw the right direction about right audiences and strategy. This broadens market opportunities to cultivating its business potentials.

App indexing and app pack features can bring huge merit to Javelo. They require technical development by app developer, web developer, and online practitioners. Optimising the app to the right direction and connecting it to the Google search engines would increase a chance to be arranged a place in the featured listings of app indexing and app pack.

4.2 Key Performance Indicators of App Search Optimisation

Key performance indicators or KPI's are internal assessment of web traffic and app performance which entail to converting leads and sales to the company. The KPI's stats represent off-page factors of SEO and ASO and reveal their performances appropriately. The KPI's of SEO project of Javelo during the period of April 2016 is demonstrated in table 7 which reported the capacity of content consumption and user engagement in the website.

Table 7. KPI's regarding to Javelo's web traffic measurement in the comparison of April and May 2016 (Google AdWords 2016)

KPI's	Components	Performance		Increase (%)
		1 April – 30 May	1 May – 30 May	
Track content consumption	Sessions	Fair	Fair	2.58
	Page views	Fair	Fair	9.46
	Avg. Session Duration	Good	Good	4.68
	Bounce Rate	Quite good	Good	-20.82
Measure visitors' engagement	Users	Fair	Fair	0.53
	Pages / Session	Fair	Fair	6.70

According to the KPI's records, all elements of the website were improved within two months from April to May 2016 after the SEO project had started. The sessions slightly rose by 2.58 percent meaning that users more actively engaged in the contents and updates Javelo had been changing. With a session, the number of page views was increased by 9.46 percent and they at the same time spent more time on each session, which was seen as a good sign in terms of customer engagement. The best of all was the bounce rate which dropped by 20.82 percent meaning that visitors stay much longer on the pages comparing to the visiting time in April. When it comes to visitors' engagement, the number of visitors did not change much but visitors showed their interests by increasingly engaging in the contents. However, Javelo still needs to invest in long-term customer engagement and brand presence by executing dynamic online marketing activities.

Table 8 presents KPI's of Javelo in Apple App Store in April 2016. The KPI's of Google Play Market is not available at the moment as the Javelo's Android app was just launched. It was new and still on upgrading status. Statistics are confidential, so numbers are not provided in the tables, they are analysed and assessed by the revealing status instead.

The App Store's statistics on table 8 showed good signs with all elements increased dramatically in percentages in April 2016, yet fast downturned in the next month. It showed the instability of Javelo app's performance. The season would be that marketing campaigns included the Mother's Day in April highly drove traffic to the site and blog posts that got people intentionally downloaded the app as they sought to find special presents. It

returned slow speed when the high season has been out. This means that the company may try out the ASO activities together with SEO and cleverly mix them for the best results.

Table 8. KPI's of Javelo app in Apple iTunes from April and May 2016

KPI's	April 2016	May 2015
Product Page Views	101%	-55%
App Units	24%	-45%
Sessions	42%	-14%
Active Device (daily average)	23%	-21%
User retention/engagement	Mainly engage within 6 days after first installed	Mainly engage within 4 days after first installed

Last but not least, a number of testimonials and customers have given good feedbacks to Javelo's products. This proves the high credibility that Javelo has offered high quality products and services. Inbound links of the posts and videos are the persuasive sources for Javelo to raise brand presence in the market place.

4.3 Conclusions

The SEO project for Javelo was planned and implemented carefully from the scratch. It was analysed to have improved slightly on website performance within a month from April to May 2016, by comparing KPI's of SEO factors. It is, however, desired to allocate more time and efforts to achieve the good results. SEO is important to promote contents, particularly blog posts for Javelo. On-site SEO factors on Javelo pages were optimised while the off-site factors were analysed weekly to track traffic sources and learn about visitors. Nonetheless, off-site SEO analytics activities require the company to purchase online software as a technical support to have deep analyses of the site and pages. Without it, problems are only shown in a surface of the ice berg.

In the context that Javelo offers services via app in the US market and intent to expand further, meanwhile the way people have searched for the app is outgrown by direct search from the app stores, ASO is very important that is worth to carefully planning and implementing. ASO implementation is promising for Javelo to create better chance for getting

discovered. ASO activities proposal are provided genuinely to help Javelo reach wider users, potentially convert into leads and sales.

The merger of SEO and ASO is predicted to flare up in the near future. Catching the market situation and manage the equilibrium point where SEO and ASO meet up are smart moves. The App Search Optimisation where ads are provided, search authentication are applied, and app indexing optimisation would become excellent supports for Javelo in the scenario of future development. App Search Optimisation used original online marketing tactics combined with mobile marketing understandings as platform to improve and execute in the online modern techniques.

5 Discussion

This chapter discusses the studying process of app search optimisation project. It includes theory summary, project evaluation, and self-assessment. Each sector shows in details the learning reflection with advantages and difficulty the author has met during the execution to get the project accomplished.

5.1 Theory summary

The digitalisation has been boomed for a long time that having formed the strong development of online marketing. Online activities have never always been dynamic by users yet become more and more challenging to marketers to bring products or services to the potential customers. Original online marketing become outdated without innovation or renovation due to the increase number of online services and online marketers. It requires businesses to possess modern trends to remain a solid position in the market. Now that it has turned to be all about contents, and spreading the contents to the right audiences in the right context generates extra benefits. Online marketers should create educational contents and optimise them on the search engines in order to reach wider range of audiences, find the right leads, and convert them into sales.

The strong utilisation of mobile marketing with various mobile promotional activities creates opportunities to reach broad audiences. SMS, MMS, mobile advertising and mobile applications have been actively developed while mobile apps imply the huge potentials among all. Mobile marketing and online marketing are both essential on internet market. The utilisation of the two approaches enables campaigns to run more efficiently.

Search engine optimisation is a familiar term for any online marketer. It is a powerful tool to drive right traffic to the pages by planning and executing many optimising activities which consist of on-site and off-site factors. On-site features include all the live actions of web pages' optimisation such as meta title, meta description, keywords testing, alt tags, links in blog posts and other contents of the site; meanwhile off-site elements analyse results of the on-site campaigns by learning user background, user engagement, page view, visits and visiting sources, etc. so that contents and user interaction are adjusted based on the buyer personas' manners to bring out the best values.

App market has become dynamic due to the dramatically increase in mobile usages. The total number of apps are huge and it tentatively keeps soaring in the future. As people spend more time on searching apps directly in the app stores, it is wise to optimise apps

to make them findable for the mobile users. App optimising activities called app store optimisation consist of on-page and off-page factors. The on-page factors include the optimisation directly on the app page like app name, icon, app description, keyword research, category, video trailer, screenshots, and reviews; while off-page activities transfer analytical elements such as number of app installs, user engagement, app velocity, and app sentiment. The off-page factors are typically abandoned or underestimated by many businesses. It causes ineffective performance for stopping at the on-page stages, investing time and efforts in both on-page and off-page ASO, thus, is a key for success.

Along the frequent upgrades to keep things simple for smartphone users on the search engines, new features have been introducing and testing, especially by Google, the dominant search engine in many countries nowadays. Apps are indexed directly to the SERPs where App Packs feature commonly groups up the reliable apps to top or bottom of the search listings. Such app supporting features give advantage to the app-as-a-service companies that helps improve the searchable ability for them right on the search engines. It also creates an energetic competitiveness in thousands of businesses offering services with app or without app. The combination of SEO and ASO, similarly the team-up between online marketers and app developers are crucially important. App search optimisation are at the moment done in not only app stores but also on the search engines, and the SEO activities remain critical part for the web content promotion to enhancing traffic and brand visibility.

App search optimisation is a dynamic topic for any business nowadays. The utilisation of marketing techniques incorporate with the online interacting solutions helps achieve the values and benefits in the long term period. Time and efforts should be invested properly to reach the final goals of the project.

5.2 Project evaluation

The project of App Search Optimisation started from the mid-March to the end of May. Recognised the importance of marketing techniques in modern business that school has not offered any similar, the author actively contacted the case company to work for them on the project of search engine optimisation with the expectation to accumulate basic understandings of such trendy topic.

The project kick-started with the self-learning of search engine optimisation. By using the existing resources in the company's internal systems, it was easier to understand new concepts and visualise them in practice. The project required to spend time and efforts to

learn new definitions and techniques to support the implementing process. Although the project was initially gone with SEO, the author found out a new technique that was as important as SEO in the online marketing approach, which was app store optimisation. As time was limited for the thesis project, ASO implementation was not accomplished but the recommendation for ASO project was given that is highly potential to generate good outcomes. Customer analysis was done briefly, yet the author could only find the surface of problems as it lacked the assistant software to go deeper.

Knowledge backgrounds come from many books and internet sources like online articles, academic articles, blog posts, white papers, journals, online reports and statistics. The project was mentored and the profound understandings were noted by the current Marketing Director of Javelo. App search optimisation project also included the collaboration with the Content Specialist of the company. The project was a good practical experience that helped the author achieve learning outcomes. Moreover, the thesis topic with hot trend would be beneficial for the author in the future career.

5.3 Self assessment

The thesis writing process helped the author develop digital marketing skills and learn new online management tools like Slack, Trello, WordPress, Google AdWords, etc. Thesis topic is state-of-the-art and technical that sometimes caused difficulty for understanding new concepts as well as gathering up reliable information. It also required lots of time to researching credible sources when writing the theoretical framework which is the hardest part through the whole process. However, it is worthy for the achievement.

Researching keywords and optimising pages from zero get the author to develop project management skills. Work individually and corporately made it flexible in time management and tasks allocation. Analysing statistics for the project advanced the logical thinking while creating SEO contents helped improve creativity.

The author has gained experience in creative ground of marketing during the work placement but this thesis has turned the author to the new interested side of marketing. The project was exciting to learn about and it opened up opportunities for the author to work in the same field in the future.

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Appendices

Appendix 1. Interview with Javelo (Benitez 16 May 2016)

1. Why is ASO important?

Search optimisation is the art of making your product or services be found online. Since apps are distributed through the app stores, you have to optimise your app's page in order to be found by potential users. A well optimised app store page will not only be able to be found by users, but will also give you a chance to be featured by Apple/Google on their app stores. Search and feature will help your app be more visible and be found by more potential users.

2. Who needs ASO and what are ASO's key roles?

Since apps are distributed only through app stores, any company with a product or service managed by an app will have to optimise its app store page in order to have a greater chance to be found. Key roles are on the answer above.

3. How do users discover apps? What motivates them?

There's plenty of ways for users to find apps, and it's up to the app's owner to strengthen its capability to be found in different ways. The main ways are (1) with personal referrals from users to their friends - which can be facilitated through online "sharing" mechanisms, (2) with online reviews - from users or online influencers (bloggers), (3) by getting featured on the app stores, and (4) by users searching with keywords straight on the app store's search function.

4. How is the shift from SEO to ASO in the current business?

More than a shift is a way to complement your online findability and promotion. You still need to do SEO to your website, since potential users might search for your app through the traditional online search-engines, and find it from your website. But if a potential user tries to find a service like yours (e.g. travel) straight from app store search, your ASO is critical to be found. Ideally you want potential users to find you and be taken straight to your app store page, since they will be one click away from downloading your app, hence increasing your chances that this action will happen.

5. What are the benefits ASO could bring to Javelo or companies offering in-app services?

It increases your reach, therefore your chances to be found. If your app store page has engaging content and reviews, the chance for the visitor to download the app triples.

6. What are the on-page and off-page factors worth to be considered in the ASO?

On page, the most important are (1) the app's name, (2) the app's icon art, (3) the screenshots and how you use them to deliver an engaging message, (4) app preview or demo, (5) app summary and the amount shown on an app's preview, (6) the keywords selected to help app store visitor's find you through search, and (7) reviews from users who have downloaded it.

Off page, the most important are (1) your website - with a straight link to your app's app store page, (2) app reviews by 3rd parties, (3) user referrals, (4) presence on articles and media, and any other type of online social mention.

7. How to pick the right keywords?

You need to choose strong keywords that have big search volume and describe your app / service. Google's keyword planner is a very good tool, if not the best, to help you choose the right words. A/B testing is also a great way to learn which keywords work best and which don't work.

8. Can we create a paid campaign in app stores?

You can make online campaigns that take people to your app store page, but till this day neither Apple or Google allow paid ads of any kind on their app stores. Therefore, your biggest bet is to work on the on-page and off-page actions, and work towards being featured on the stores.

9. How to measure success of an app?

Although many people look at downloads, this is a very misleading KPI. The most important KPI are registrations (if the app requires users to do so), and even more important the rate of returning users. The valuable users are those who remain active, as these are also where you have the greatest chance to engage, activate for purchases, and nurture for repeated purchases and referrals. That said, you still need to look at downloads, but to compare the number of downloads with (for example) returning visitors, and compare this in time, so you can see if you can improve the rate between these two KPIs.

10. What sort of advice or tips to have higher ranking in app stores?

On page, if I would have to choose the three main things to focus on, these would be:

- app name: having a search keyword on the name is even stronger than all keywords combined when it comes to being found through a keyword search
- app preview (video): video is by far the most engaging type of media, and has a direct influence on engagement, therefore affecting the download rate
- app reviews: if your app reviews are negative, it will show on your app's rating, which is "one view killer" for others to hit the download button. Make sure you get good reviews and keep the rating up

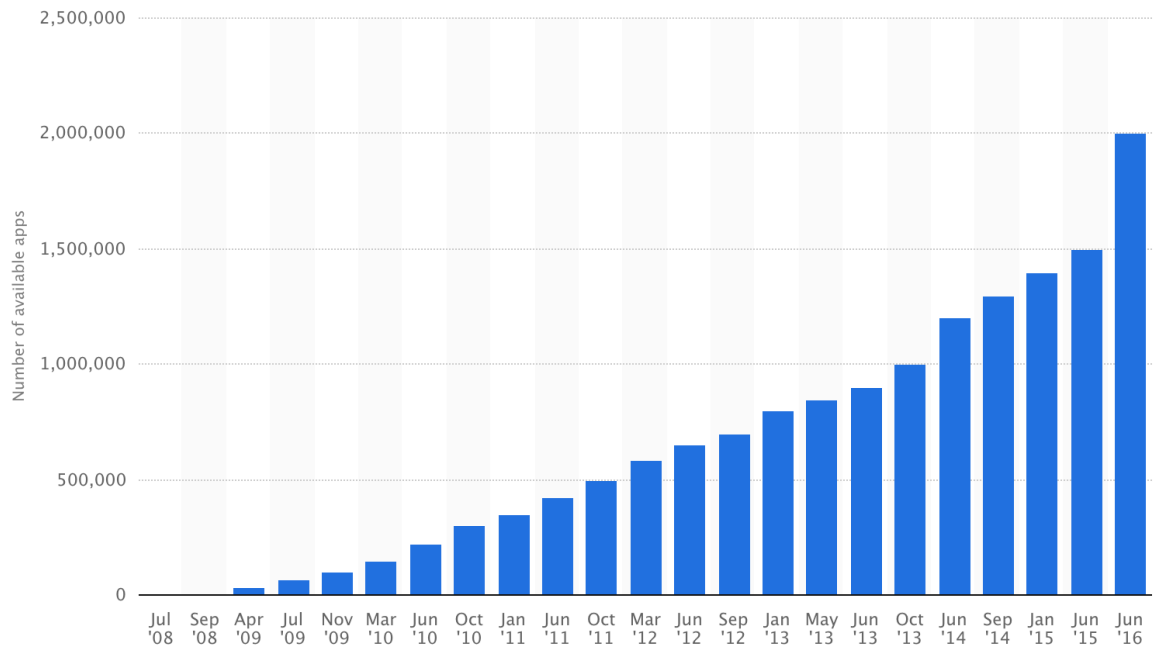
Off page, the most important are:

- 3rd party reviews: people search for the app to read independent reviews before downloading the app, just as consumers read online reviews about a product before purchasing it.
- user referrals: there's nothing like word-of-mouth, even if the "mouth" is online. Make sure to have ways for highly engaged users to have a fast and easy way to share their love for your app online. You can incentivise this process through lotteries and give-aways, to make sure that you get that WOM.
- App Store contacts: it is not easy to get one, but if you manage to get the attention of a decision-maker, and your app is doing well, the chance of being featured is one to work for, as this can translate into a huge amount of downloads.

11. Can you predict the future of ASO?

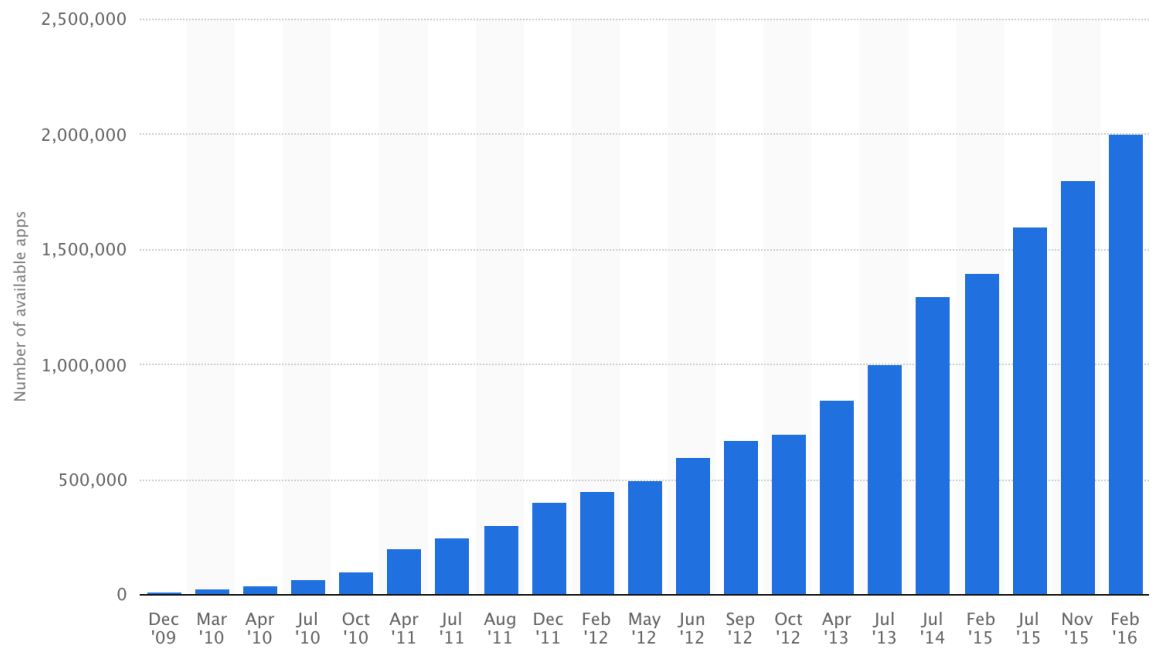
That's easy since ASO on the App Store or Google Play are like SEO twenty years ago. Basically, these app search engines, specially Apple's, are very simple with too little functionality or search possibilities. With time, these app search-engines will become more sophisticated, as Google or Bing are right now. As their search possibilities increase, app marketers' job will get more complex and harder to help on the app's visibility and findability.

Appendix 2. The Statista graphs for App Store Optimisation theoretical framework



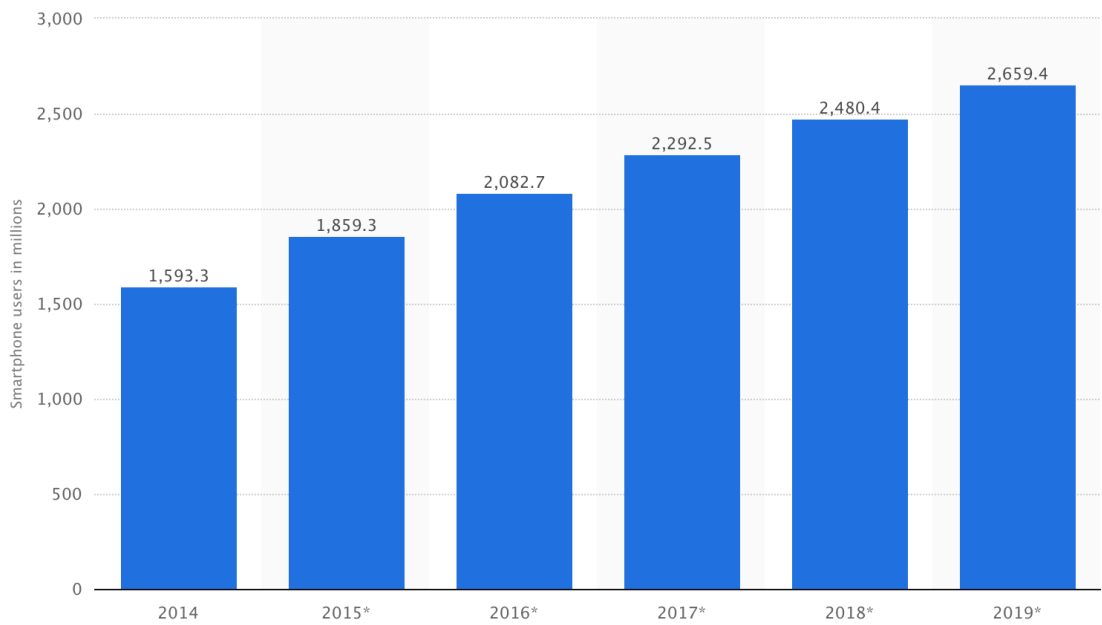
© Statista 2016

Number of downloads in Apple App Store in June 2015



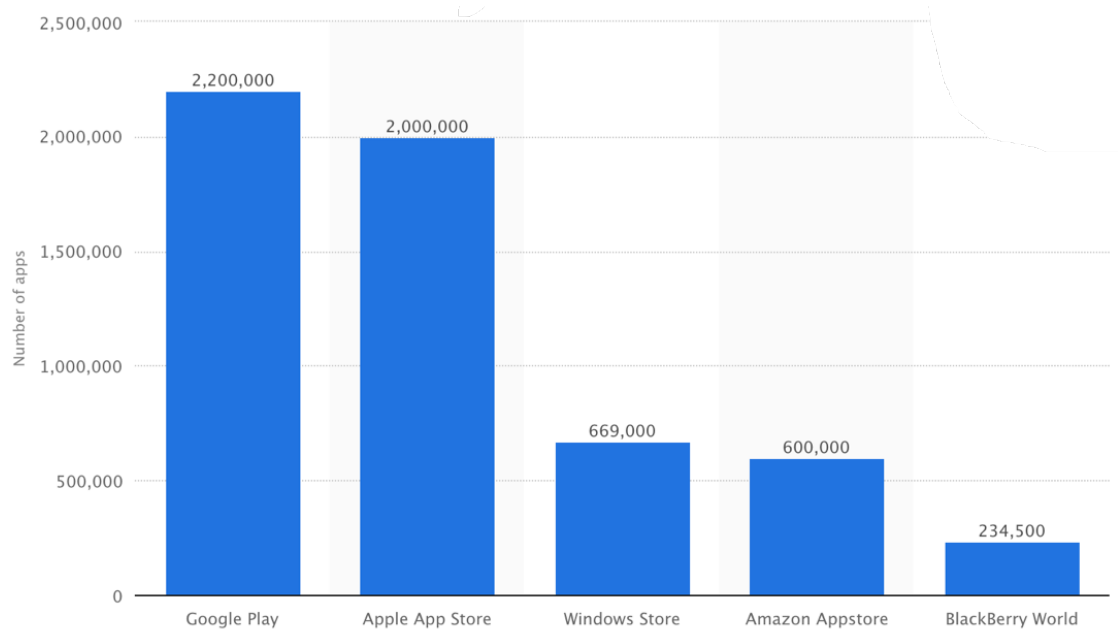
© Statista 2016

Number of available apps in Google Play in the period of 2009–2016



© Statista 2016

Number of smartphone users worldwide from 2014 to 2019



© Statista 2016

Number of apps available in leading app stores of as June 2016

Appendix 3. Keywords Planning for blog posts (Google Keyword Planner in April to May 2016)

Products (Nouns)	Verbs	Adjectives
jewelry	design	unique
jewellers	custom	delightful
charms	create	unforgettable
necklace	customize	impressive
pendant	personalize	custom
cameo	make	fascinating
accessory	turn	personal
premier jewelry	draw	charming
premier designs	get	memorable
jewelry catalog	buy	sweet
custom jewelry	own	inspiring
custom jewelry design	choose	loving
design jewelry	find	exciting
design jewelry necklace		heart warming
design jewelry and accessories		special
jewelry stores		surprise
jewelry online		personalized
silver jewelry		interesting
jewellery		nice
fashion jewelry		cool
Silver Necklace		lovely
Sterling Silver		beautiful
heart necklace		cute
chain necklace		motivational

Appendix 4. Examples of blog posts optimisation

Title	SEO Title	SEO Meta Description	Slug
Kids Say: What I Love About My Father	Kids Say: What I Love About My Father	Kids share their thoughts why they love their fathers by their hilarious and heartfelt answers that will make you not stop smiling	kids-father
13 Funny And True Quotes For Father's Day	Hilarious Quotes For Father's Day That Make You Laugh Hard	13 Quotes for Father's Day that will make your father smile, laugh and cry. Honor your father in this father's day with these best Father's Day quotes.	fathers-day
The new Javelo jewelry that will rock YOUR world	Trendy Costume Jewelry That Will Complete Your Collection	Create jewelry from the images you love the most by Javelo app. Quick design with good price and unique products that complete your jewelry collection	javelo-jewelry-rocks
Top 5 jewelry themes to honor your high school days	Top 5 Jewelry Themes For The Graduation Day That You Can't Miss	Graduation is an important day, dressing nicely is part of it. Top themes you can identify with and create a unique jewelry piece to compliment your outfit	graduation-day-accessories
Best Mother's Day Gift For Grandma	Find The Best Mother's Day Gift For Your Women: Mother & Grandma	Want to bring happiness and surprise to your Mother, Grandma and Great Grandma in the Mother's Day? Javelo introduces you the great way to make it happen...	best-mothers-day-gift
How To Turn Your Kid's Drawing Into A Mother's Day Gift	Turn Your Kids Drawing Into A Mother's Day Gift - Javelo Stories	How to turn your kids drawing into a Mother's Day Gift? It takes only four easy steps. With Javelo you can turn any picture into a unique necklace.	kids-drawing-mothers-day-gift